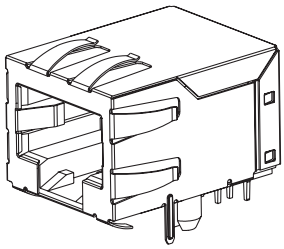
Jameco Part Number 2048770

Modular Jack

44050

High Speed, Right Angle
Low Profile
Shielded and Unshielded Versions



Features and Benefits

- Exceeds Category 5 performance
- Gigabit Ethernet compatible
- Enclosed top
- Industry Standard Footprint
- Shield with enhanced panel grounding tabs
- 100% tested for hi-pot continuity

Reference Information

Product Specification: PS-44050-003
Packaging: Tray
UL File No.: E107635
CSA File No.: LR19980
Mates with: FCC68 plugs
Designed In: Inches

Electrical

Voltage: 125V
Current: 1.5A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 1000V AC
Insulation Resistance: 500 Megohms min.

Mechanical

Durability: 500 cycles min.

Physical

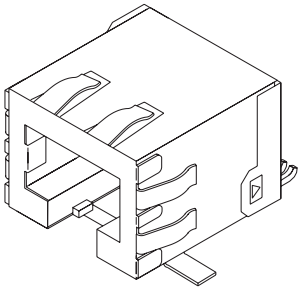
Housing: Black glass-filled nylon, UL 94V-0
Contact: Phosphor Bronze
Plating: Contact Area—1.27µm (50µ") min. Gold
Solder Tails—2.54µm (100µ") min. Tin, Nickel overall
Operating Temperature: -40 to +80˚C

Circuits	Loaded Contacts	Order No.					Lead-free
		Unshielded	Shielded				
			With All Panel Grounding Tabs		With Offset Panel Grounding Tabs		
			Front PCB Ground Tab Option	Rear PCB Ground Tab Option	Front PCB Ground Tab Option	Rear PCB Ground Tab Option	
8	8	44050-0001					Yes
			44050-0007		44050-0009		
			44050-0002		44050-0004		
			44050-0006		44050-0008		
				44050-0003		44050-0005	

Modular Jack

85543

High Speed, SMT
Right Angle, Low Profile, Shielded



Features and Benefits

- Fully-shielded connector
- Shield with enhanced panel grounding tabs
- Exceeds Category 5 performance
- Automatic vacuum placement

Reference Information

Product Specification: PS-95122 and PS-85505 (Section 5.2)
Packaging: Antistatic blister tape on reels
Mates With: FCC68 plugs
Designed In: Millimeters

Electrical

Voltage: 125V
Current: 1.5A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 1000V
Insulation Resistance: 500 Megohms min.
Shielding Effectiveness: 20dB min.

Physical

Housing: Black polyamide, UL 94V-0
Contact: Phosphor Bronze
Plating: Contact Area—Post plate 1.27 to 1.52mm
(50 to 60µ") Gold
Solder Tail Area—1.90mm (75µ") min. Tin
Underplating—Nickel
Operating Temperature: -40 to +80˚C

Circuits	Loaded Contacts	Order No.	Grounding Tabs	SMT	Lead-free
8	8	85543-0001	Yes	Yes	Yes
		85543-0002	No		
		85543-0003	Yes	No	

PRODUCT SPECIFICATION

CATEGORY 5 RIGHT ANGLE MODULAR JACKS

1.0 SCOPE

This Product Specification covers the 1.27 mm (.050 inch) centerline (pitch) printed circuit board (PCB) modular jack connector series with selective gold and tin plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

Right Angle**,** Single Port Modular Jack	44050
Right Angle, Ganged Modular Jack	44150
Right Angle, Stacked Ganged Modular Jack (with light pipes, shielded only)	44170
Right Angle, Stacked Ganged Modular Jack (without light pipes, shielded only)	44520

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate sales drawings (SD-44050-002, SD-44150-002, SD-44170-001, SD-44520-001) for information on dimensions, materials, plating and markings.

2.3 SAFETY AGENCY APPROVALS

UL File Number……E107635
CSA File Number……..LR19980

3.0 REFERENCE DOCUMENTS

FCC Rules and Regulations, Part 68, Subpart F
REA Bulletin 345-81, PE-76; Specification for modular telephone set hardware
ANSI/EIA/TIA-568
IEC-60603-7
UL 1863
MIL-STD-202; General requirements for test specifications

4.0 RATINGS

4.1 VOLTAGE

56.5 V DC
150 V_{RMS} AC (Ringing voltage only)

4.2 CURRENT

1.5 Amps @ 25°C

4.3 TEMPERATURE

Operating: - 40°C to + 85°C
Nonoperating:* - 40°C to + 85°C
*Packaging materials should not exceed + 50°C

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

	DESCRIPTION	TEST CONDITION	REQUIREMENT
	Contact Resistance (Low Level)	Mate connectors: apply a maximum voltage of **20** mV and a current of **100** mA. (Measurement locations in Section 7.0)	**20** milliohms MAXIMUM [initial]
	Insulation Resistance	Unmated connector, mounted to a PCB: apply a voltage of **100** VDC between adjacent terminals and between terminals to ground.	**500** Megohms MINIMUM
	Dielectric Withstanding Voltage	Mate connectors: apply a voltage of **1000** VAC for **1** minute between adjacent terminals and **1500** VAC between terminals to ground.	No breakdown; current leakage < **5** mA
	Capacitance	Measure between adjacent terminals at **1** kHz	10 picofarads MAXIMUM
	Shielding Effectiveness	Measure at frequency from **30** mHz to **400** mHz.	20dB MINIMUM

5.2 TRANSMISSION PERFORMANCE

ITEM		TEST CONDITION	REQUIREMENT	
Reference Specification TIA/EIA 568A			Frequency (MHz)	Loss (dB)
5.2.1	Maximum Attenuation	Measurement of signal power loss due to connection made on any pair within the connector under test. Worst result shall be within specification.	1 4 10 16 20 31.25 62.5 100	0.1 0.1 0.1 0.2 0.2 0.2 0.3 0.4
5.2.2	Minimum Near End Crosstalk	Jack under test shall be terminated with resistor of 100 ohms +/- 1% (see *figure 1*). Measurements are made in these 2-pair combinations: 1-2, 3-6, 4-5, 7-8. The worst case NEXT loss must be within specification	1 4 10 16 20 25 31.25 62.5 100	65 65 60 56 54 52 50 44 40
5.2.3	Minimum Return Loss	Jack under test shall be terminated with resistor of 100 ohms +/- 1%. (See *figure 1*) A balanced input signal is applied to a connector pair while signals that are reflected back due to the impedance discontinuities are measured at the same port from which the signal is applied. A measurement shall be done for each pair (1-2, 3-6, 4-5, 7-8).	1 16 20 100	20 20 14 14

5.2 MECHANICAL REQUIREMENTS

	DESCRIPTION	TEST CONDITION	REQUIREMENT
	Connector Mate Force	Mate connector at a rate of **25 ± 6** mm (**1 ± ¼** inch) per minute. (Gage dimensions in Section 7.0)	**22** N (**5** lbf) unshielded MAXIMUM insertion force **35** N (**8** lbf) shielded MAXIMUM insertion force
	Durability	Mate connectors up to **500** cycles at a maximum rate of **10** cycles per minute prior to Environmental Tests.	**10** milliohms MAXIMUM (change from initial)
	Vibration (Random)	Amplitude: 1.50mm (.060") peak to peak Sweep: 10-55-10 Hz in one minute Duration: 15 minutes ±X,±Y,±Z axis (45 minutes total)	**10** milliohms MAXIMUM (change from initial) & Discontinuity < **1** microsecond
	Plug Retention Force	Apply an axial pullout force on the plug at a rate of **25 ± 6** mm (**1 ± ¼** inch) per minute.	**89** N (**20** lbf) MINIMUM retention force
	PCB Separation Forces	Apply a perpendicular load on the plug at a rate of **25 ± 6** mm (**1 ± ¼** inch) per minute.	**4.5** N (**1** lbf) MINIMUM withdrawal force before solder reflow **89** N (**20** lbf) MINIMUM withdrawal force after solder reflow
	Shock (Mechanical)	Mate connectors and shock at **50** g's with three saw tooth wave form shocks in the ±X,±Y,±Z axis (18 shocks total).	**10** milliohms MAXIMUM (change from initial) & Discontinuity < **1** microsecond

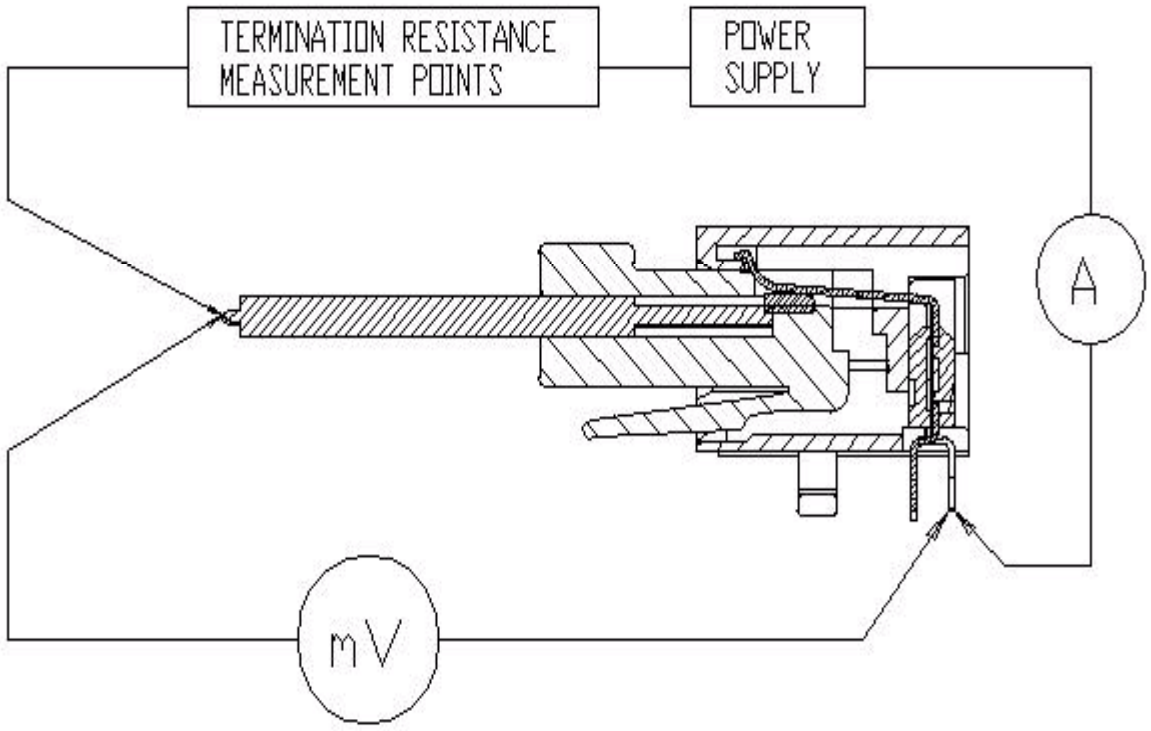
5.3 ENVIRONMENTAL REQUIREMENTS

	DESCRIPTION	TEST CONDITION	REQUIREMENT
	Shock (Thermal)	Mate connectors; expose to **10** cycles of: **-40**°C to +**85**°C **30** minutes dwell	**10** milliohms MAXIMUM (change from initial) & Visual: No Damage
	Thermal Aging	Mate connectors; expose to: **240** hours at **85±2**°C	**10** milliohms MAXIMUM (change from initial) & Visual: No Damage
	Humidity (Cyclic)	Mate connectors: expose to **10** cycles at **90-95**% relative humidity with temperatures at +**25**°C and +**65**°C per MIL-STD-202F method 106F (without -10°C dip)	**10** milliohms MAXIMUM (change from initial) & Dielectric Withstanding Voltage: No Breakdown at **500** VAC & Insulation Resistance: **200** Megohms MINIMUM & Visual: No Damage
	Solder Resistance	Dip connector terminal tails in solder: Solder Duration: **5±0.5** seconds Solder Temperature: **260±5**°C **{**Recommended same parameters as **SMES-152.}** Note: The solder resistance test simulates a wave solder process. This test should not be used to determine the suitability of the connector for a convection or IR reflow solder process.	Visual: No Damage to insulator material

6.0 PACKAGING

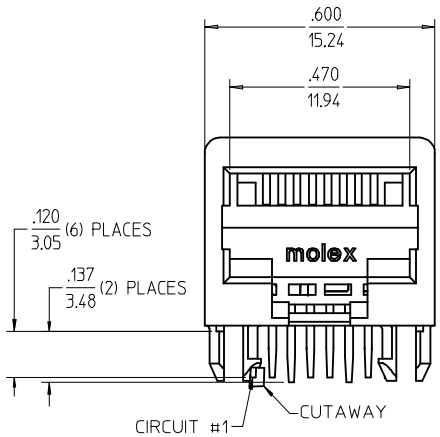
Parts shall be packaged to protect against damage during handling, transit and storage. See appropriate sales drawings on Sheet 1 for packaging descriptions.

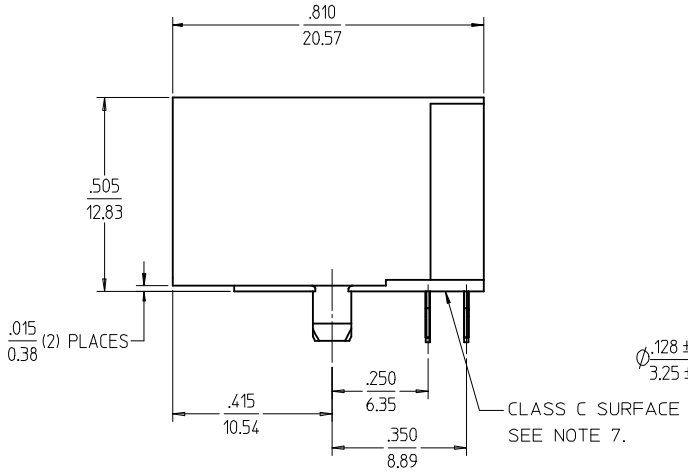
7.0 GAGES AND FIXTURES

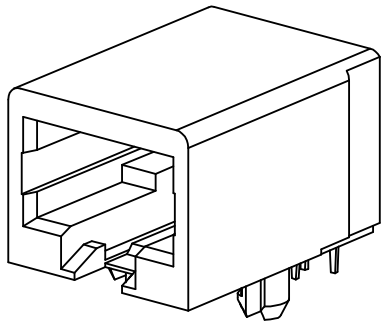


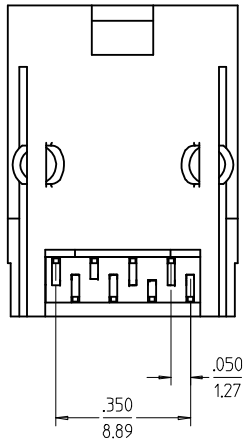
TERMINATION RESISTANCE MEASUREMENT POINTS
Connector and plug terminals and wire conductor bulk resistance to be subtracted from measurements

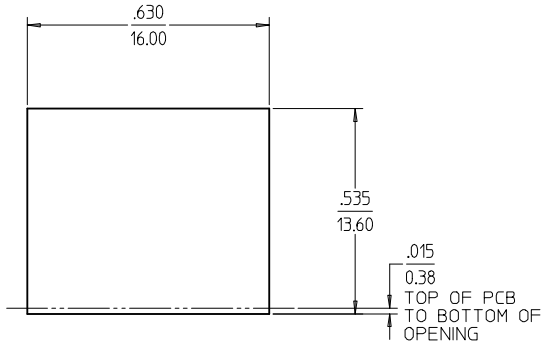
8.0 OTHER INFORMATION



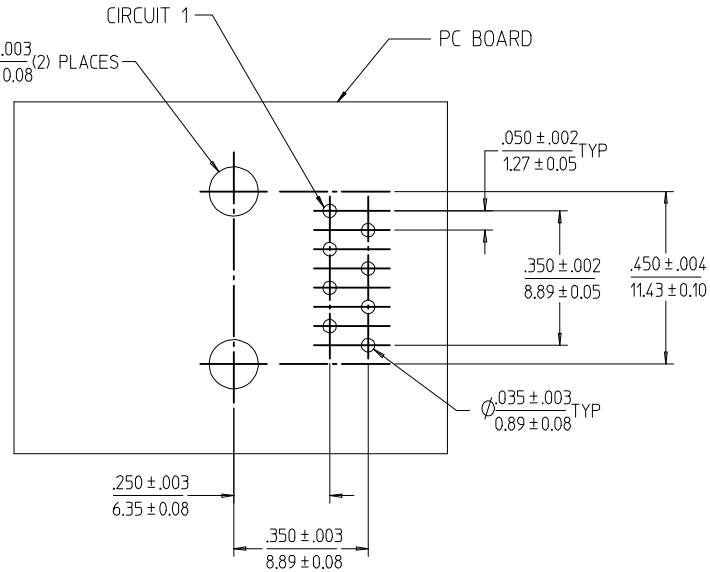




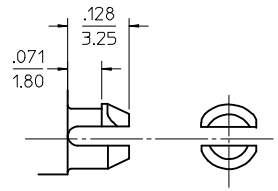




RECOMMENDED PANEL
OPENING



PCB LAYOUT: COMPONENT SIDE
RECOMMENDED PCB THICKNESS: .062/1.57



SNAP-FIT PEG
SCALE: NTS

NOTES:
1) MATERIAL:
   HOUSING: NYLON(PA), GLASS FILLED, UL94V-0, COLOR: BLACK
   TERMINALS: PHOSPHOR BRONZE
2) FINISH:
   TERMINALS:
   SELECT GOLD IN CONTACT AREA: 50 MICROINCHES / 1.27 MICROMETERS MIN.,
   *SELECT TIN IN PC TAIL AREA: 100 MICROINCHES / 2.54 MICROMETERS MIN.,
   WITH OVERALL NICKEL UNDERPLATE: 50 MICROINCHES / 1.27 MICROMETERS MIN.
   *THE PRIMARY SHIPPING CARTON WILL BE LABELED "COMPLIANT TO RoHS DIRECTIVE 2002/95/EC AND ELV ANNEX II OF DIRECTIVE 2000/53/EC". CARTONS WITHOUT THIS LABEL MAY CONTAIN PRODUCT WITH TIN-LEAD IN THE PC TAILS.
3) PRODUCT SPECIFICATION AND PROCESSING PARAMETERS: PS-44050-003.
4) PACKAGING SPECIFICATION:
   CONNECTOR ASSEMBLIES IN THERMOFORMED TRAYS PER MOLEX PACKAGING SPECIFICATION PK-44050-004.
5) MATES WITH: MODULAR PLUGS THAT CONFORM TO FCC REGULATION PART 68.5.
6) TERMINAL LENGTHS MAY BE DIFFERENT FROM TERMINAL TO TERMINAL.
7) THIS PART CONFORMS TO CLASS B REQUIREMENTS OF COSMETIC SPECIFICATION PS-45499-002 WITH THE EXCEPTION OF THE SURFACE INDICATED, WHICH IS A CLASS C SURFACE.

DESCRIPTION	REV	DATE
MODIFY NOTE 7	E1	2008/09/05
EC NO: UCP2009-0477		2008/09/11
DRWN: JBELL		2008/09/11
CH'KD: JBELL		
APPR: FSMITH		

QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

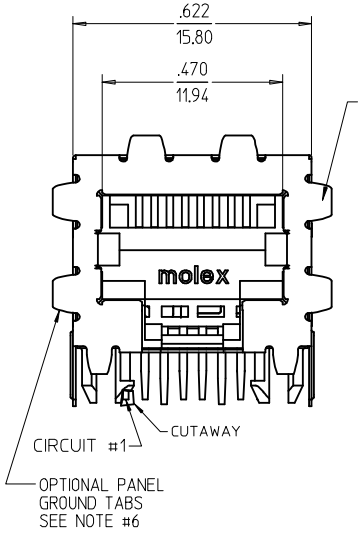
	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .010
2 PLACES	± 0.25	± ---
1 PLACE	± ---	± ---
ANGULAR ±1/2°		

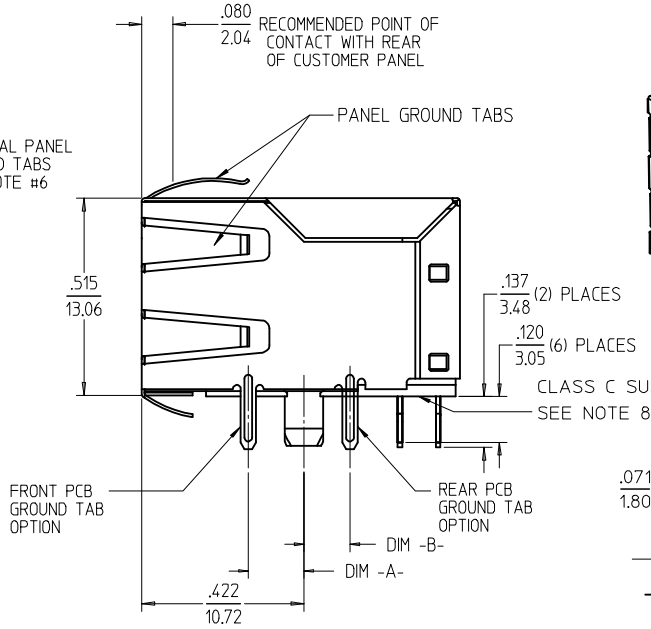
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

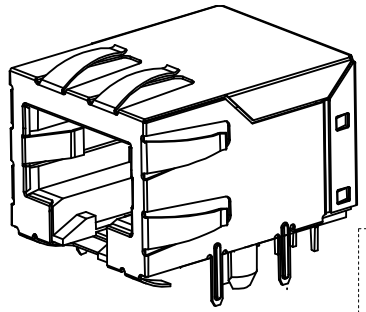
DIMENSION STYLE	IN/MM
SCALE	4:1
DESIGN UNITS	INCH
	THIRD ANGLE PROJECTION
DRAWN BY	MARANTO
DATE	98/04/06
CHECKED BY	ROBERTS
DATE	98/04/06
APPROVED BY	ROBERTS
DATE	98/04/06
MATERIAL NO.	440500001
DOCUMENT NO.	SD-44050-002
SHEET NO.	1 OF 2
SIZE	C

TITLE: CATEGORY 5E MODULAR JACK ASSEMBLIES, SINGLE PORT

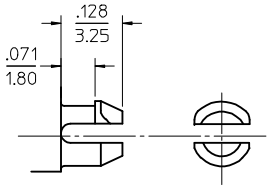
MOLEX INCORPORATED



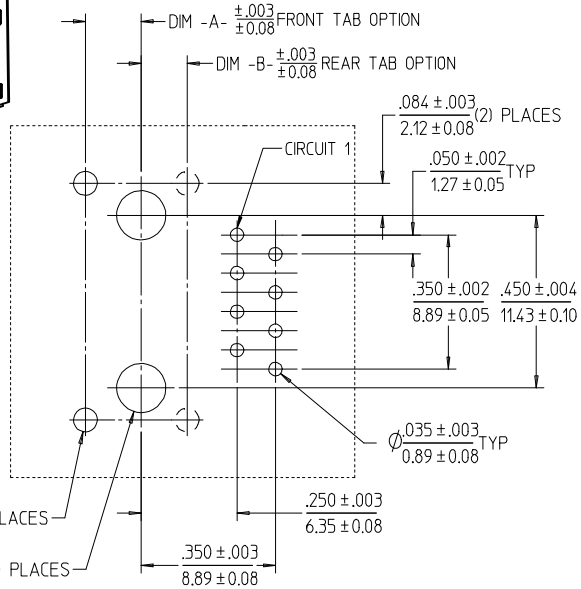




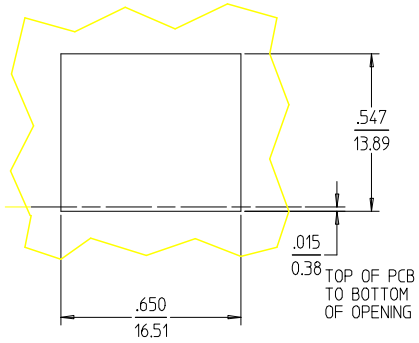
ISOMETRIC VIEW
(NOT TO SCALE)



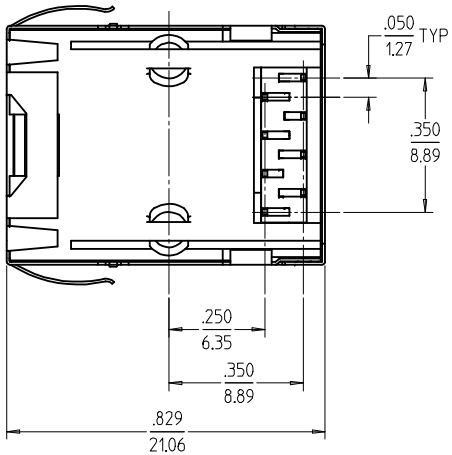
SNAP-FIT PEG
SCALE: NTS



PCB LAYOUT: COMPONENT SIDE
RECOMMENDED PCB THICKNESS: .062/1.57



RECOMMENDED PANEL OPENING
(SHIELDED VERSIONS)



NOTES:
1) MATERIAL:
HOUSING: NYLON(PA), GLASS FILLED, UL94V-0, COLOR: BLACK
TERMINALS: PHOSPHOR BRONZE
SHIELD: BRASS
2) FINISH:
TERMINALS:
SELECT GOLD IN CONTACT AREA: 50 MICROINCHES / 1.27 MICROMETERS MIN.,
*SELECT TIN IN PC TAIL AREA: 100 MICROINCHES / 2.54 MICROMETERS MIN.,
WITH OVERALL NICKEL UNDERPLATE: 50 MICROINCHES / 1.27 MICROMETERS MIN.
SHIELD:
*100 MICROINCHES / 2.54 MICROMETERS NICKEL OVER 50 MICROINCHES / 1.27 MICROMETERS COPPER UNDERPLATE, PCB GROUND TABS DIPPED IN TIN
*THE PRIMARY SHIPPING CARTON WILL BE LABELED "COMPLIANT TO RoHS DIRECTIVE 2002/95/EC AND ELV ANNEX II OF DIRECTIVE 2000/53/EC". CARTONS WITHOUT THIS LABEL MAY CONTAIN PRODUCT WITH TIN-LEAD IN THE PC TAILS AND/OR SHIELD.
3) PRODUCT SPECIFICATION AND PROCESSING PARAMETERS: PS-44050-003.
4) PACKAGING SPECIFICATION:
CONNECTOR ASSEMBLIES IN THERMOFORMED TRAYS PER MOLEX PACKAGING SPECIFICATION PK-44050-004.
5) MATES WITH: MODULAR PLUGS THAT CONFORM TO FCC REGULATION PART 68.5.
6) AVAILABLE WITH THE (2) SPECIFIED PANEL GROUND TABS OMITTED FOR SIDE TO SIDE STACKABILITY, PER THE ASSEMBLY MATERIAL NUMBER TABLE.
7) TERMINAL LENGTHS MAY BE DIFFERENT FROM TERMINAL TO TERMINAL.
8) THIS PART CONFORMS TO CLASS B REQUIREMENTS OF COSMETIC SPECIFICATION PS-45499-002 WITH THE EXCEPTION OF THE SURFACE INDICATED, WHICH IS A CLASS C SURFACE.

ASSEMBLY MATERIAL NUM	DIM -A-	DIM -B-	PANEL GROUND TAB OPTION
440500007	.120/3.05	N/A	ALL
440500002	.145/3.68	N/A	ALL
440500006	.180/4.57	N/A	ALL
440500003	N/A	.120/3.05	ALL
440500009	.120/3.05	N/A	SEE NOTE #6
440500004	.145/3.68	N/A	SEE NOTE #6
440500008	.180/4.57	N/A	SEE NOTE #6
440500005	N/A	.120/3.05	SEE NOTE #6

SEE SHEET 1
EC NO: UCP2009-0477 2008/09/05
DRWN: JBELL 2008/09/11
CH'KD: JBELL 2008/09/11
APPR: FSMITH 2008/09/11
DESCRIPTION
E1
REV

QUALITY SYMBOLS
▼=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± .010
2 PLACES	± 0.25	± ---
1 PLACE	± ---	± ---
ANGULAR ±1/2°		

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

DIMENSION STYLE: IN/MM
SCALE: 4:1
DESIGN UNITS: INCH
THIRD ANGLE PROJECTION

DRAWN BY: MARANTO DATE: 98/04/06
CHECKED BY: ROBERTS DATE: 98/04/06
APPROVED BY: ROBERTS DATE: 98/04/06

TITLE: CATEGORY 5E MODULAR JACK ASSEMBLIES, SINGLE PORT

molex MOLEX INCORPORATED

MATERIAL NO.: SEE CHART
DOCUMENT NO.: SD-44050-002
SHEET NO.: 2 OF 2

SIZE: C